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Sound and silence: The demarcation of musical space in the music of John Cage.

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SOUND AND SILENCE:
THE DEMARCATION OF MUSICAL SPACE
IN THE MUSIC OF JOHN CAGE

BY

MARK S. EELES

AN ESSAY

SUBMITTED TO THE

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The undersigned certify that they have read, and recommend to the Department of Music for acceptance, an essay entitled:

Sound and Silence: the Demarcation of Musical Space in the Music of John Cage

submitted by Mark Stephen Eeles in partial fulfillment of the requirements for the degree of Master of Music in Applied Cello.

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ABSTRACT

The art of every age is necessarily bound to the the cultural context in which it was made. The impact of the science of physics has been so profound as to change the face of the earth, and consequently, how twentieth-century man perceives the reality of his world.

John Cage is a composer who has been greatly affected by these changes. The first part of this paper seeks to understand the biographical, philosophical, and musical influences that have contributed toward the development of Cage's musical aesthetics. At the heart of this aesthetic is the understanding that sound and silence are the equal partners in the formation of a piece of music. This insight has led Cage to an art that is very much opposed to the musical values inherent in much of the art since the Renaissance. This is due to the fact that Cage elevates silence in art to the point where it becomes an integral part of the musical fabric. The implications of the increasing move toward silence in art are both philosophical and musical in nature.

One such implication is that Indeterminacy allows the fact that all musical components, whether they are sounds or silences, can be related at a more basic level than before - namely through time. This emphasis on time as the fundamental component of music, gives Cage the freedom to structure his sounds and silences in an infinitely variable way. Nevertheless, the basis of his style - the demarcation of musical space through time - remains consistent and logical throughout. To illustrate this fact, part two examines seven pieces of different genres, selected broadly from Cage's entire output.

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"Music is, for [John Cage], not the restricted art form that our civilization has always assumed, but a vastly enlarged area of speculation that emerges as both a branch of theatre and a branch of philosophy. His experiments in this area are often moving, amusing, at times frightening, occasionally enlightening, always entertaining, and undeniably related to the uses of sounds. Whether the works are "music" or not is an unimportant question; they function much as music does, they teach us much about music - as music does, in the abstract - and , in their own right, they demand our attention and consideration."
--Roger Reynolds.

"Nothing is accomplished by writing a piece of music.
" " " " hearing " " "
" " " " playing " " "

Instantaneous and unpredictable our ears are now in excellent condition."

--John Cage

INTRODUCTION

"To be avante-garde is not merely to be different from what came before, but to alter radically the consciousness of the age."
--Morris Dickstein

John Cage: composer, inventor, idiot, genius, avante-gardist, charlatan, anarchist, philosopher. All these descriptive words have been applied, at one time or another, to one of the most "influential radical minds of our age. No one has done more to form the aesthetics for post-World War II advanced art than John Cage because of the impact of his ideas upon scores of artists, musicians, theatre directors, critics, and choreographers; indeed, no single figure in the American arts today has influenced so many first-rank creative minds as profoundly."[1] Nevertheless, the European audiences and critics of the 1950's were outraged by his apparent antics. While performing his famous piece, 4'33", he sat at the piano preparing and slicing vegetables, putting them in an electric blender and then drinking the juice, with the sounds of these various activities amplified throughout the hall. In 1964, at the premier performance of Atlas Eclipticalus, the New York Philharmonic Orchestra booed and hissed Cage off the stage. At another concert

the commotion that resulted after the performance has been compared to the near riot that attended the first performance of the Rite of Spring.[2] And yet, at the same time, despite the hostility and misunderstanding, Cage has received much recognition, and awards from all segments of artistic society.[3] Not only that, but his audience has been increasing steadily and serious and informed evaluation of his work has recently been undertaken.

What has this extraordinary musician done in the artistic world to turn it nearly upside down? The answer lies in the fact that Cage has become known as the "apostle of Indeterminacy"[4] - a musical and philosophical set of ideas that relate two of the materials of music he deems fundamental: sound and silence.

After a brief biographical sketch high-lighting events that have influenced his musical and philosophical development, this paper sill show how this influence relates to Indeterminacy in the light of certain discoveries of dynamic physics. As well, avante-garde tendencies in the music of Debussy, Webern and Satie have deeply affected Cage's style and approach. Then, seven representative pieces will be discussed in the light of the latter influences. Conclusions will be made concerning Cage's style and the demarcation of musical space.

BIOGRAPHICAL INFLUENCES

"It may be objected that it is a small step from Zen no-mind to Dada mindlessness, from the mantra to the joke, but then even the Buddha smiles."
--Paul Griffiths

"The attitude that I take is that everyday life is more interesting than forms of celebration, when we become aware of it. That when is when our intentions go down to zero. Then suddenly you notice that the world is magical."
--John Cage

John Cage is a West Coast American born in Los Angeles in 1912.[5] His father was an inventor, engineer and woodsman who has been described as having the "tough qualities of the traditional mountaineer submissive to no authorities academic or federal."[6] In later years, Cage junior would say of himself, "I've always been on the side of the things one shouldn't do and searching for ways of bringing the refused elements (of music) back into play."[7] In 1912, Cage senior established a world's record for staying under water in a submarine of his own design - thirteen hours, with thirteen people on Friday the thirteenth! Although Cage junior at an early age showed a marked disinclination toward engineering, he has said that he inherited the experimental attitude from his father.

"An inventor's view of novelty as all-important has been John's view of music.... He prizes innovation above all other qualities - a weighing of values which gives to all of his judgements an authoritarian aspect."[8]

After graduating from High School with a straight-A average and representing his class as valedictorian, Cage set out into the world to experience a few journeys of both the geographical and mental kind. At Pomona College, he discovered Gertrude Stein's poetry, which opened to him the non-rational side of the human being. This influence would become important a decade later when he started working with the dancer, Merce Cunningham. He dropped out of College after his second year and went to Paris to study piano briefly, and then architecture. He soon tired of that, too, and wandered about Europe trying his hand at painting, poetry and modern dance.

In 1931, Cage returned to California and began studying composition with Richard Buhlig who introduced Cage to the concept of time in music. "Since then, I have always considered time as the essential dimension of all music."[9] After achieving a pseudo-serial style, Cage was sent by Buhlig to the famous experimenter, Henry Cowell, who influenced Cage by directing him to study his new book on rhythm. Cowell showed a good deal of enthusiasm and support for the searching young

composer-to-be; as a result of this encouragement, Cage travelled to New York to study at the New School for Social Research. He also worked privately with Adolf Weiss with the idea of eventually going to Schoenberg who had just come to the United States. Studying with Schoenberg, Cage discovered he had no feeling for harmony. However this important teacher's emphasis on structure did impress itself on the young composer. As well, it was at this time that Cage first became familiar with the music of Anton Webern.

Through a friend, Cage became acquainted with a film-maker, Oskar Fischinger, whose ideas prompted Cage to entertain new ideas about how to hear and think about music. At one time Fischinger talked to Cage, "about the spirit which is inside each of the objects of this world. So, he told me, all we have to do to liberate that spirit is to brush past the object, and to draw forth its sound."[10] Thus Cage became aware that sound could exist for its own sake, which led to a music that did not depend on harmony for its structure; instead, defining a structure on the basis of rhythm was not only a way out of the impasse to which his studies with Schoenberg were heading but it carried him on to the world of percussion that occupied him for the next ten years.

At the end of the war, just after his acclaimed percussion innovation of the prepared piano, Cage

experienced something of an artistic crisis. The resolution of this conflict moved Cage in the direction which deeply affected his development: the discovery of the Orient. Through his studies of Indian music with a friend, his reading of Ananda Coomaraswamy's book on the nine permanent emotions of the Indian aesthetic tradition, and his growing fascination with the philosophies of the East, he discovered Zen. At Columbia University, specializing in Zen studies with Dr. D. T. Suzuki, Cage arrived at a philosophy that music existed to "to sober and quiet the mind, thus rendering it susceptible to divine influences".[11] These 'divine influences' Cage interpreted in the Zen manner "of waking up to the very life we are living." Cage's underlying principle, then, is that all art should "imitate nature in her manner of operation."[12]

Having resolved his doubts about the usefulness and legitimacy of music, he renewed his creative efforts with vigor. In 1949, Cage was awarded a Guggenheim Fellowship that allowed him to go to Europe. There he met Pierre Boulez and formed an association which eventually led him toward the maturity of his development: the use of chance.[13] He had already experimented with charts which helped him plot rhythmic structures. The next step was to let chance operations determine all parameters of the music. He then discovered the ancient Chinese oracle and book of

wisdom, the I Ching. This book, with its charts and hexagrams, allowed Cage to devise a means of composition using the chance procedures it demanded through the tossing of coins. With this procedure, Cage believes, music will truly "imitate nature" in her complexity, variety, and sometimes unpredictable fashion.[14]

This idea finds direct expression in Cage's interest in mushrooms; he has become known as one of America's best amateur mycologists. In an interview, Richard Schechner asked Cage:

S: "How have all these things [ideas about art] come together in your mind and work? You work in music, theatre, writing, lecturing, dance..."

C: "Mushrooms..."

S: "That kind of range is very unusual today."[15]

Cage's direct connection with his art and the study of mushrooms is not only evident in a subtle comment like the above. In a Zen explanation, he links his two primary interests to the fact that 'music' and 'mushroom' appear adjacent to each other in most dictionaries. On a more practical level, while out in the forest hunting fungi, he is very much aware of performing his silent piece, 4'33". This identification with sound and music in nature underscores his preoccupation with "imitating nature in her manner of operation." Also the act of hunting mushrooms can be a chancy and indeterminate pastime.

There is not only the risk of getting lost while aimlessly on a search, but also the slim chance of a mistaken identification of an edible type for a deadly poisonous one. This can happen no matter how much one knows about mushrooms. "I became aware that if I approached mushrooms in the spirit of my chance operations I would shortly die," Cage has said. "So I decided that I would not approach them in this way." As well, some of his music has been inspired from his firsthand realization that there exists an infinite variety of mushrooms; this has been a constant source wonder and fascination.[16]

Along the same lines, Cage is very much absorbed by the game of chess, which delightfully presents to him the fact that no two games can be played in quite the same way. He was introduced to the game by his friend and fellow artist, Marcel Duchamp, whom Cage has gratefully acknowledged as having deeply influenced his thinking.[17]

For John Cage, life is the celebration of adventure, the delight in ordinary everyday occurrences, and the hope in the optimism of its choices and immense possibilities. It is this attitude that deeply interpenetrates with his philosophical outlook, his music and his interests. Whatever life presents, Cage remains his genial and smiling self.

STYLISTIC INFLUENCES

PHILOSOPHICAL

"If we had a keen vision and feeling of all ordinary life, it would be like hearing the grass grow and the squirrel's heartbeat, and we should die of that roar which lies on the other side of silence."
--George Eliot

"And then I thought of sounds we cannot hear because they're too small, but through new techniques we can enlarge them, sounds like ants walking through the grass."
--John Cage

A desire to copy, represent or transform nature into art has manifested itself throughout the history of art and thought from Aristotle's Poetics to the advanced avante-garde aesthetics of today. This pursuit of the aesthetic in nature has been connected in a vital way, especially since the Renaissance, with changes in the scientific world view.[18] "The art and science of a period are the two main thrusts of our developing change in our ways of organizing reality. They tend to move forward in parallel ways, sometimes one appearing first as the spearhead of the new, sometimes the other. A change in artistic comprehension of reality may herald a change in the scientific world-picture, or vice versa."[19]

Ever since Cage came to the conclusion that the purpose of art was to "imitate nature in the manner of her operation," he has, like Aristotle, persistently tried to attain this goal. However, its practical realization by the two men could not be at greater variance. The explanation of this difference lies in the fact that our twentieth-century understanding has moved from a biological perspective, like Aristotle's, to a scientific model based on physics. The effect of this shift is a revolution which has radically transformed twentieth- century life. Nobel prizewinning physicist Percy Bridgman has said that "the conceptual revolution forced by recent physical discoveries in the realms of relativity and quantum effects is not really a revolution in high velocities or the very small, but is properly a revolution on the macroscopic level of everyday life...from a fixed, stable cosmology to a dynamic, evolving, ever-changing cosmogenesis."[20] In other words, the twentieth-century view of the world has moved from man as the center of the world where everything has order and purpose to a macro-view that simply includes man in a dynamic flow of energy and change. Therefore, with physics as a new model, Cage has gone on to define his world view on the basis of the artist as an <u>observer</u> of life in a state of <u>process</u>. Since Cage has tried to see what the implications of scientific discoveries are

for everyday life and has produced an art which manifests this life, there are a number of corollaries that extend from this modern perspective of observation and process.

"All the currents of science flow together in this: that the analytical and impersonal view of the world is failing . . . . The basis of the world is the observation." A scientific implication that is co-dependent upon observation is that the theory of "relativity derives essentially from the philosophical analysis which insists that there is not a fact and an observer, but a joining of the two in an observation."[21] What this suggests, for Cage, is that art as an object is not distinct from ourselves, but an experience, an event, including the observer. As a result, the perception of reality is therefore an individual experience that is different for each person. Therefore, to present art from the point of view where it must be 'universal' and 'fixed' with the accompanying qualities of 'logic' and 'meaning,' is to falsify reality. Instead, a work of art should be conceived and performed in such a way that it brings out the plurality explicit in our modern life - a suggestion of Einstein's that there is no universal "now" but only the "here and now" for each observer. Art should not lead to contemplation but rather beyond

that to expose us to the macro processes of life: the manner of nature's operation.

Consequently, Cage overthrows the distinction between 'Art' and 'Life.' His art relies instead on non-intentionality, purposelessness and no-mindedness - the Zen tenet to achieve a total acceptance of perceptual reality. This idea, supported by the physics model, undermines the traditional concept of the artist as a master of technique with the ability to express universal truths. As a result, with purposelessness as one's purpose, critical evaluation according to these traditional values becomes meaningless, because the artist purports to have nothing which one can submit to analysis. "I have nothing to say and I am saying it and that is poetry."[22] Because of this view Cage has been accused of propounding a negative existentialism, but he says that this purposelessness is rather "an affirmation of life - not an attempt to bring order out of chaos nor to suggest improvements in creation, but simply to wake up to the very life we're living, which is so excellent once one gets ones's mind and one's desires out of its way and lets it act of its own accord."[23] This perspective allows the observer to involve himself in the proper business of art, which is curiosity and awareness. Therefore, Cage believes that critical

judgments are destructive to this purpose. Anything else is a waste of time.

Cage's departure from traditional notions of the relationship between form and content leads to certain implications about the observer's position of awareness. First of all, sounds can exist in and of themselves, no matter what the source, to be free of abstract ideas. This follows the assumptions of Einsteinian scientists who construct their scientific models only out of what is in fact observed.[24] This means that the world in and of itself has no meaning (only the meaning we give it) and so in the same way, art which imitates nature must not reveal 'essence' or express 'meaning.' Cage believes that to do otherwise is an imposition of the artist not only upon the art work itself but also upon those who experience it; for ideas of order, purpose, continuity, and absolutes are really intrusions of the self, rather than manifestations of the external world.

To achieve this outward perspective, Cage invokes procedures that allow the observer the right to respond freely of his own volition, completely apart from any intention of the composer. In this regard, he has used chance operations "so that the rest of the world has a chance to enter into the ego's own experience."[25] Contemporary science and philosophy have provided a meaningful precedent for the use of chance to free the

observer's will. "Modern physics, through Heisenberg's principle of indeterminacy, has loosened Laplacian determinism [a theory that precludes human free will] sufficiently to allow for uncaused atomic events, permitting in certain specifiable situations the incidence of genuine chance..., the consequences of which ingress into the macrocosm."[26]

Similarly, through the application of chance, Cage has realized the logic and usefulness of introducing music elements that are not traditionally conceived as 'musical,' such as noise and silence (meaning sounds that are not intended).[27] 'Meaning' now becomes a function of the observer's interaction with the piece of music rather than some preformed and calculated intention that is imposed by the composer. On this basis, any means of generating sounds, and any assemblage of sounds resulting from this process, becomes logical and valid. Thus Cage has freed the single sound and has revealed that silence can be heard imaginatively so that all sounds of the world can be perceived musically.

Thirdly, sounds not only exist for their own sake, but they need not be related by any means nor should they carry implications of what has preceded or what will follow. Cage wants to remold the listener's traditional expectations of hearing music . Freedom

from the bias of personal background, taste, learning or theory, is his goal.[28] As a result, musical syntax - the glue of traditional music - becomes obsolete because syntax, like language, works on the principle of fixed patterns and repetition. Instead, life is a fluid set of patterns that are continually changing because energy, not matter (that which makes the world substantial and 'meaningful'), is the key to the modern science of physics. Hence, Cage sees "art as a process that is set in motion by a group of people" (composer, performer, listener).[29] The composer/observer/listener, not having logical patterns to interpret, is free instead to be open to the multiplicity and open-endedness of life. Cage says that "sounds can be free of fixed relations between two or more of them".[30]

MUSICAL

"An art that is to be genuinely avante-garde, must first of all, acknowledge the present."
--Marjorie Perloff

At the turn of the century there were three men whose music foreshadowed the avant-garde tendencies in the second half of this century. This influence has direct bearing on the development of Cage's world view and philosophy.

Debussy is said to be the Father of the avant-garde as he clearly rejected the musical conventions of his time. In a large part, this is due

to his keen awareness of the values inherent in Asian music to which he was exposed at the 1889 International Exhibition in Paris. "As he spoke of Javanese music as being based on a counterpoint beside which that of Palestrina pales, he revealed himself as having perceived not only the multilayered structure in gamelon music but also its rhythmic intricacy, neither of which was suspected by his fellow composers."[31]

One of his first works to assimilate Asian concepts and techniques was Prélude à l'Après-midi d'un faune. Paul Griffiths attributes the possible generation of the first two bars of the Prélude to the influence of the above mentioned 1889 exhibition.[32] Certainly, one cannot fail to hear the arabesque nature of this opening melody as it meanders and stealthily turns in on itself outlining the inimical tritone - the diabolus in musicus of Medieval theory. This melody is in striking contrast to the solid and straight-forward nature of other music being composed at the time - Dvorak's symphonies for example.

Also, a feature that stands out in the Prélude is the ambiguousness of the harmony in relation to the form of the piece. Until the turn of the century, the harmonic system of the major-minor modes virtually dominated the compositional processes of tonal music with melody being inextricably bound with these processes.[33] As a result, forms like the Sonata form

naturally arose whose internal logic and towering strength stemmed from these integral harmonic/melodic relationships. However, in the Prelude, Debussy gives himself the freedom to allow other musical forces besides harmony, like timbre, rhythm and orchestration, to influence structure. For example, the sound of a chord can have the possibility of being released from its harmonic connotations making it simply a timbre that can be heard as a linking device just as acceptably as traditional harmonic progressions. Roger Reynolds' book Mind Models states that, in Impressionism, musical sound became an expression of itself more than at any previous period.[34]

It was this aural innovation that Anton Webern inherited and developed. Pierre Boulez made this comment concerning Webern: "Schoenberg and Berg both belong to the twilight years of the great German romantic tradition, which they brought to its peak in such luxuriant, flamboyant works as Pierrot Lunaire and Wozzeck; whereas Webern - steering a course that led, as it were, through Debussy - reacted strongly against all forms of inherited rhetoric in his effort to rehabilitate the power of sheer sound."[35]
Profiting from Debussy's influence, Webern went on to develop the idea that he could use an entirely new material for composition: tone color in and of itself. In a musical device called "Klangfarbenmelodie," Webern

was able to handle the timbre of each instrument from note to note with great precision. The effect of this was to replace pitch-harmony as the means of creating movement in the music which, as a consequence, gives his works a distinctive and unique expression and quality of sound. In contrast to other composers having been attracted to the note-by-note procedures, it was, instead, the way Webern's music sounded that attracted Cage's musical imagination.[36]

Another important tendency in Webern is the aphorism of his musical expression. Arnold Schoenberg said that Webern could "express a novel in a single breath." It is possible to play his complete set of works in under 3 hours and it is estimated that a third of this time is simply silence. Upon opening a Webern score, one is confronted with a large number of silences punctuating a few carefully chosen and orchestrated sounds. Cage found that it was the unique dialectic between sound and silence - sounds heard in terms of silence, and silence becoming an integral part of the musical fabric - that attracted him to Webern's music. It is not too far-fetched to assume that this increasing movement toward silence was something that may have contributed in the next decade following Webern's death, to Cage taking the little and yet giant and radical leap of extinguishing sound all together in his famous piece, 4'33".

Some historians give little recognition to the composer Erik Satie, who is considered at best to be a mad prankster who barely deserves being thought a serious composer.[37] But Cage insists that Satie is one of the most brilliant musical minds of the 20th century: "It's not a question of Satie's relevance. He's indispensable."[38] Cage has made the following comment in his article entitled "In defense of Satie":

> In the field of structure, the field of the definition of parts and their relation to a whole, there has been only one new idea since Beethoven. And that new idea can be perceived in the work of Anton Webern and Erik Satie. With Beethoven the parts of a composition were defined by means of harmony. With Satie and Webern they are defined by means of time lengths. The question of structure is so basic, and it is so important to be in agreement about it, that one must ask: Was Beethoven right or Webern and Satie right? I answer immediately and unequivocally, Beethoven was in error, and his influence, which has been as extensive as it is lamentable, has been deadening to the art of music. If you consider that sound is characterized by its pitch, its loudness, its timbre, and its duration, and that silence, which is the opposite and therefore necessary partner of sound, is characterized only by its duration, you will be drawn to the conclusion that of the four characteristics of the material of music, duration or time length, is the most fundamental. It took a Satie and a Webern to rediscover this musical truth.[39]

The above quotation, taken from a work written in 1948, marks the beginning of the artistic crisis mentioned above, and the end of his work with percussion music. The stab at poor Beethoven radically razes in one bold stroke traditional concepts of form and content so inextricably bound with Beethoven's music. The rhythmic structures which Cage

had just been bringing to a "height of sophistication," to quote Henry Cowell, allowed him to formulate this revolutionary concept. He found yet another reason to introduce non-musical noises into his music. Later in the article just quoted above, Cage says: "Just as Klee was willing to draw people and plants and animals, so into Satie's continuity come folk tunes, musical clichés, and absurdities of all kinds; he is not ashamed to welcome them in the house he builds: its structure is strong."[40]

The rhythmic plotting of the two composers leads to another important stylistic comparison: non-development. In Satie's piece, Vexations, a short melodic phrase is repeated 480 times. This leads to sounds being treated as separate objects in themselves, resulting in a form that has no direction, no real beginning or end. For Cage, this emptiness of time revealed to him "a time that's just time which will let sounds be themselves if they are folk tunes, unresolved ninth chords, or knives and forks, then they can be just folk tunes, unresolved ninth chords or knives or forks."[41]

The music of both men leaves both the performer and listener continually open to discovery. Returning to the barest musical elements, Cage and Satie abandon musical rhetoric with the greatest delight and optimism. From the very beginning both composers have

shown a distinct distaste for the emotionally superfluous whether it is romanticism, impressionism, expressionism or any other kind of "ism." It is unpretentiousness and even sometimes bald banality that unites these two composers. "I think Cage wanted, had always wanted, to save music from itself by removing its narcotic qualities and its personalized pretentiousness, as well as all identifiable structure and rhetoric. In this regard his aim has been close to that of Erik Satie."[42]

In summary, from the above discussion of "Influences," we find several important factors making up Cage's aesthetic of Indeterminacy:

> Reality as we experience it is pluralistic; therefore art is to be seen as a dynamic process which cannot be "fixed." Traditional values of 'meaning,' 'logic' and 'syntax' become irrelevant to music. Therefore:
>
> 1. Critical evaluation of a piece of music, along with the traditional concepts of expertise and authority, become meaningless.
>
> 2. Sound becomes liberated for its own sake. Any sound, no matter what its source, is a valid element of music.
>
> 3. Silence is the necessary complement and equal partner of sound.
>
> 4. Any assemblage of sounds and any means of generating them is valid.
>
> 5. Sound and silence working together through time are the only legitimate determinants of form.

THE MEANING OF SILENCE

"No bird has the heart to sing in a thicket of questions."
--Rene Char

"The music I prefer, even to my own or anybody else's, is what we are hearing if we are just quiet."
--John Cage

Cage's idea that sound and silence are crucial factors in the demarcation of musical space, forms the thesis of this essay. This concept is seen most clearly in Cage's famous piece, 4'33", where no intended sounds are produced by the performer, only those of the performance environment. This work is so important that it has been hailed as "the third milestone in the history of Western music (the first being the development of musical notation, before 1000 A.D.; the second being the invention of sound recording)."[43] Ironically enough, these latter developments are, on the one hand, negated by 4'33" and yet, on the other, fulfilled by it.

This fulfillment in silence, as Susan Sontag says in her essay on "The Aesthetics of Silence," is understood in Modern Art "as a metaphor for a cleansed, non-interfering vision, appropriate to artworks that are unresponsive before being seen, inviolable in their

essential integrity by human scrutiny."[44] Through this metaphor, the artist seeks to address the human being's need to confront the spiritual problems inherent in his age by "assailing older artistic goals and replacing and redrawing outworn maps of consciousness."[45] The avante-garde has attempted to overthrow the traditional view that art expresses something of the human consciousness in its attempt to know itself. However, the newer generation sees art as a "part of a dialectical transaction from within consciousness itself, resulting in a craving for the cloud of unknowing beyond knowledge and for the silence beyond speech . . ., and the substitution of chance for intention."[46] This ideal has posed serious frustrations for itself because of the conflict of this transcendence with the earthy materials of art that are traditionally perceived as 'expressing' something. The artist is, as a result, cursed with mediacy.

Silence is the ideal way for an artist to dispel the curse because silence always implies its opposite, 'sound,' as 'down' and 'right' always imply 'up' and 'left' respectively. The converse is also true: sound can't exist without silence. Perhaps for the first time in history, it is John Cage who dispels the myth of there being such a thing as silence in music. By way of personal proof, he reports an experience in an anechoic chamber, a room made technologically as silent

as possible. Instead of total silence, he perceived two sounds: his nervous system and his circulatory system. According to Cage, the pretense of "silence" in traditional music - events which merely punctuate a phrase or add drama to the moment - can now be reinterpreted as a rich pool of resources for music making. This potential comes from any source, including the environment and it is, as Cage says, "called silence only because it does not form part of a musical intention."[47] Silence, then, as Cage hears it, is "a full void, an enriching emptiness, a resonating or eloquent silence. Silence remains, inescapably, a form of speech (in many instances, of complaint or indictment) and an element in a dialogue."[48]

As a result, silence is the window through which one can catch a glimpse of the ultimate meaning of his music. Cage wants to take us beyond the realm of "feelings" to a reality of a different kind - to raise our level of experience to a heightened, active state - in fact, to life itself. He achieves this in a way that is analogous to the methods of avante-garde painters like Jackson Pollock who indiscriminately throw blotches of paint upon an empty canvas. Going even further, Robert Rauschenburg's, White Paintings of 1952, simply display an empty canvas painted plain white. In the same way, Cage appears to define a musical space through time and then to fill it with

sounds: the sound of the cello, perhaps; an orchestra; the extraneous sounds from the street; some radios; in short anything, or, as in the case of 4'33", nothing at all. Cage has, as Peter Yates once quipped, "emancipated music from its notes."[49]

Truly, John Cage is keenly aware of the "roar on the other side of silence" bringing his music a wonderful sense of immediacy. 'Life,' as an end in itself, as something knowable and fixed, loses its central importance. In its place, the very process of composition and the liberating effect of the resulting phenomena upon the observer, becomes more important. This is the goal of ancient men of wisdom, who tried to integrate, as M. C. Richards has said, "social, political, economic and religious concerns through a philosophy and practice of music. This is Cage's intuition and commitment."[50]

INDETERMINACY IN SEVEN REPRESENTATIVE PIECES

"The responsibility of the artist consists in perfecting his work so that it may become attractively disinteresting."
--John Cage

Despite the fullness of expression in 4'33", John Cage has continued to speak in a variety of different and unusual compositions. The process ofeach of the seven Cage pieces, encompassing different periods and genres, will be described along with the music's relevance to the established criteria of Indeterminacy.

First Construction (1939)

The whole work is organized according to durational proportions of time lengths - the number of bars per rhythmic unit, the total number of units being 16. In this case the overall proportions are: 4:3:2:3:4. Not only are the 16 sections grouped according to this plan but also each section consists of 16 bars similarly grouped, so that there is an immediate correspondence of structure between the small units and the whole form. The use of the idea of blocks of time in a musical structure geared to lengths of time is related in the same way as a building is to

its girders. Or expressed in another way, the resulting relationship has been called the 'square root principle' where lengths of time are related to one another as square and square root.

Cage himself has said that he has used the principle of basing his music on rhythmic structures, used for the first time in Construction, in all his work (symmetrically or asymmetrically) until 1952. This method of composition takes over a large part of the decision-making of a musical composition; therefore it facilitates objective creation because the numerical relationships are worked out entirely in advance. Nevertheless, this process still results in a fixed framework, fixed materials and fixed ways of working. The only freedom which he allows himself is in how he places events within the durational time grid. As Cage has said, "I devise a rhythmic structure based on the duration, not of notes, but that of spaces of time."[51]

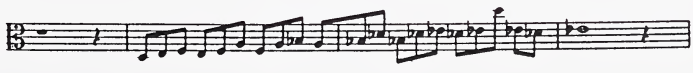
Also of importance is the fact that Cage deliberately introduces into this piece sound/noise elements that were at that time academically and traditionally unacceptable. It is scored for 'instruments' like thundersheets, oxen bells, brake drums, anvils, gongs submerged into water, sleigh bells and the like.

The indeterminate aspects that this piece uses are:

i. any sound no matter what source is a valid element.
ii. sounds exist for themselves.
iii. sounds and silences determine form.
iv. traditional values of music are meaningless. (objective creation.)

Music for Marcel Duchamp (1947)

This work was composed toward the end of the period (up until 1952) in which he used rhythmic structures. It was created for the purpose of providing music for a film on the famous sculptor of mobiles, Alexander Calder. Consequently, this piece is marked by 11-bar units which correspond to the time structure of the film. However, the work shows a distinct difference from the early 1940 works. Paul Griffiths has noted that in the past, Cage filled his prearranged rhythmic patterns with movement and a desire to communicate rationally in terms of development and recapitulation. "But now there seems to be a tendency to create vacuums of silence or empty repetitions" as seen in the following excerpt from the end of the piece.



"It was as if he were saying that his rhythmic structure technique could reveal a passive nature as

well, which asks for time simply to be filled and not necessarily engaged."[52]

As a result, this piece reveals a loosening up of the more fixed nature of his work up to this time. Cage realized that he was moving from ideas of saying something to ideas of saying nothing at all.

The indeterminate aspects that this piece uses are:

i. any assemblage of sounds is valid and they are not necessarily related by any means nor do they carry implications of what has preceded or what will follow.
ii. silence is the complementary and equal partner of sound.
iii. sounds and silences determine form.

Music of Changes (1951)

In this piece, even though he starts with a rhythmic structure, Cage takes another step to enlarge his stylistic techniques. Instead of basing the rhythmic structure on bar lengths or time periods he builds his structure on durations expressed in lengths of speed. Consequently the notation is expressed in space where 2-1/2 cm. equals a quarter note.

Cage starts out, then, with a rhythmic structure of 3,5,6-3/4,6-3/4,5,3-1/8, but with the aid of the I-Ching, the note-to-note continuities are totally determined by chance. This is done by laying out materials in charts which determine tempi, durations, dynamics, sounds, silences and how many events were allowed per time unit. The result is that Cage was

able to get away from the 'fixed' quality of his earlier works because the total length of the piece was undetermined until the last chance operation in reference to tempi was completed. Consequently, the frequent changing tempi obscure the structural regularities. Moreover, in contrast to the earlier works, the foreground rhythm has no connection with the basic number sequence of the predetermined rhythmic structure.

In this piece, the role of chance procedures is to provide an interesting twist to the sound/silence duality. The use of the pedals of the piano is subjected to chance and on several occasions they come up during silence. This technique provides an opportunity for the instrument to respond to any non-intended sound either by dampening or giving resonance to the silence. Therefore, it becomes possible to talk about the 'dynamics' of silence.

The indeterminate aspects that this piece uses are:

i. any means of generating sounds is valid.
ii. sounds and silences determine form.
iii. sounds exist for themselves and are unrelated to each other.
iv. silence is the complementary and necessary partner of sound.

Fontana Mix (1956)

The next step for Cage was to leave every aspect of the compositional process to chance even to the point where he withdraws himself from setting down

musical notation. In its place, the performer prepares his own musical actions either before or during the performance. To do this, Cage provides 10 transparent sheets with points; 10 drawings having differentiated curved lines that never overlap themselves; and a graph having 100 units horizontally, 20 vertically and a straight line. The sheet with points is placed over a drawing with curves in any position. Over both these the graph is placed along with the straight line which is used to connect a point within the graph with one outside.

Measurements horizontally on the top and bottom lines of the graph, with respect to the straight line, give a 'time bracket' (time within which the event may take place, the graph units equaling any time unit of the performer's choice).

Measurements vertically on the graph with respect to the intersections of the curved lines and the straight line may specify any actions the performer desires to make. This material, most easily adaptable to electronic tape music, may be used freely for instrumental, vocal and theatrical purposes. The performer simply decides what action variables correspond to which curved lines and then makes the measurements with the graph and the straight line to determine the sequence of actions and their durations.

The material is meant to provide 17 minutes of music but any duration less than this may be determined for a program depending on the number of variables the performer has chosen. Therefore, the results of a performance using the Fontana Mix process move increasingly out of the control of the composer as each 'realization' will sound totally different from all the others. This piece represents one of Cage's most indeterminate pieces.

Consequently, all the features of Indeterminacy find their way into this piece:

i. quality of 'fixed' work obliterated.
ii. sounds exist for themselves.
iii. sounds and silences determine form.
iv. silence is the complementary and equal partner of sound.
v. any means of generating sounds is valid.
vi. any assemblage of sounds is valid.
vii. traditional values of music are meaningless and critical evaluation is useless.
viii. any sound no matter what the source is valid.

Atlas Eclipticalis (1961)

The material for Atlas Eclipticalis was drawn from a star map of the same name. Cage stipulates that the 86 instrumental parts may "be played in whole or in part, in any agreed upon duration, in any ensemble, chamber or orchestral, of the above performers; with or without Winter Music." Each part has notated a series of "constellations" where sounds are made according to specific directives regarding duration and frequency of tones; dynamics are relative to the size of note heads. These groups of sounds are written in space

corresponding to clock time and are placed within arrows indicating 0", 15", 30" and 45". Each player has a time window of about 5 seconds to play his "constellation" estimating when to enter relative to the location of the constellation within the clock time.

The players, beginning at an agreed-upon starting point, proceed in time to the agreed upon end. The conductor acts in such a way as to mark the passage of time so that the performer's actions are not obstructed. What happens in the moment-to-moment succession of instrumental sounds is thoroughly unpredictable and uncontrolled.

From the extreme uncontrolled nature of Fontana Mix, Cage moves to more control over the material because of the notational strictures, but still allows the performer considerable flexibility in interpreting when and how he will play. The intent of this piece is to be alert to the non-intentional interpenetrations of sound. The listening experience is as close as one can get to a leisurely survey of the heavens on a clear night. On the occasion of the first complete performance in 1976, Cage stated that the piece "doesn't have any of my ideas or any of my feelings in it - it's just sounds."[53]

The indeterminate aspects that this piece uses are:

i. sounds exist for themselves.
ii. sounds and silences determine form.
iii. any means of generating sounds is valid.
iv. any assemblage of sounds is valid.
v. any sound no matter what the source is valid.
vi. silence is the equal and complementary partner of sound.

HPSCHD (1969)

HPSCHD is an indeterminate score that assembles an enormous collection of diverse materials. It utilizes for the first time in Cage's music the musics of other composers, principally Mozart, as well as original computer synthesized music.

The framework for the work involves fifty-two prepared audio tapes, the material of which divides the octave into five to fifty-six tones. The live component involves seven harpsichord solos playing Mozart's "Instructions for Composing Waltzes With the Help of Two Dice." With the assistance of the computerized version of the I-Ching, Cage realized three different versions of the fragments, two of which incorporated other passages from Mozart's Sonatas. Two other players were free to perform different selections of music from Mozart, Beethoven, Schumann, Chopin, Gottschalk, Busoni, Schoenberg, Hiller and Cage. A further instruction given by Cage is "in addition to playing his own solo, each harpsichordist is free to play any of the others."

Altogether, then, there were fifty-eight amplified channels, each coming from its own speaker, all of which were positioned evenly around the huge Assembly Hall at the University of Illinois's Urbana campus that seats eighteen thousand people. The result of this process is a microtonal collage of complete chaos. Cage explains: "I used to think of five as the most things we could perceive at once; but the way things are going recently, it may be in a sense of quantity, rather than quality, that we have our hope. When you use the word 'chaos,' it means there is no chaos, because everything is equally related - there is an extremely complex interpenetration of an unknowable number of centers."[54]

As if the sound complex were not enough, Cage added a visual component as well. Flashing on the walls of the hall were several thousand slides mostly of outerspace shots, from fifty-two projectors. In the middle of the arena were suspended several parallel sheets of semi-transparent material. The images of thousands of slides and eight films were projected through these sheets, resulting in an amazing play of light and image. Also, from a circular 340-foot screen that ran around the ceiling rim, a set of slides projected pages of Mozart's music, computer instructions and space scenes. Beams of colored light

and spinning mirrored balls added to the ocular abundance.

The effect is not only to ensure that no order can be perceived, but also to demand that the observer be responsible for determining what is heard and how the experience is structured as it is impossible to focus attention in a particular direction.[55] Also, the person a quarter of a mile away on the other side of the hall will experience a totally different array of light and sound. Cage has said that "the less we structure the occasion and the more it is like unstructured daily life, the greater will be the stimulus to the structuring faculty of each person in the audience. If we have done nothing then he will have everything to do."[56]

The indeterminate aspects that this piece uses are:

i. sounds exist for themselves.
ii. sounds and silences determine form.
iii. any means of generating sounds is valid.
iv. any assemblage of sounds is valid.
v. any sound no matter what the source is valid.
vi. traditional values of music are meaningless.

Etudes Australes (1974)

The title of this work comes from a star map called Atlas Australes. The stars of this map are printed in six colors. As in Atlas Eclipticalis, the musical material is formed by placing a grid of parallel lines over the maps and subjecting the compositional process to chance operations which allow

Cage to determine which stars he traces and how many. Octave distribution and dynamics are also determined by chance.

In contrast to Atlas, however, the transcription of the stars is in fuller and more traditional notation with each musical event being placed in a time continuum where space equals time. Two time lines run underneath each system, supporting a series of tactae which divide each line into seven equal segments. The length of each segment is left up to the performer but once the time length is decided, the performer must adhere exactly to this time frame. Above this set of "barline" tactae is a second line with tactae indicating the exact position of each event with respect to the "barline," allowing the events to be placed accurately within this framework.

The indeterminate aspects that this piece uses are:

i. sounds exist for themselves.
ii. sounds and silences determine form.
iii. any means of generating sounds is valid.
iv. any assemblage of sounds is valid.
v. any sound no matter what the source is valid.
vi. silence is the complementary and equal partner of sound.

CONCLUSION

"The work of many artists often comes closer to philosophical speculation than most esthetic writings."
--George Kubler

"The method of science is to search for and establish perceptual reality - what is perceived as outside of our inner experience - and to describe it so that we can perceive something new and change. The method of art is to change our inner experience so that we then perceive the perceptual world (and our inner experience) differently."
--Henry Margenau

More than three hundred years ago, William Shakespeare defined his world view in terms of his art within space and time:

> "All the world's a stage,
> And all the men and women merely players;
> They have their exits and their entrances,
> And one man in his time plays many parts,
> His Acts being seven ages."[57]

In the context of Shakespeare's observation, Cage's view that 'everything we do is music,' strikes a familiar chord. In fact, Cage himself has described music in terms of theatre "as something which engages both the eye and the ear."[58] "Theatre is always around us and it has always hung around music."[59] This correspondence between theatre and music brings into focus key elements of Cage's style.

Both drama and music are defined in terms of time and space. The most important element in music,

according to Cage, is time.[60] As Cage's compositional means have been defined in terms of process, time can been seen as a function to provide a "stage" (space) for "action" (sound and silence) to be produced. Through time, space becomes nothing more than a frame to be filled. Once the filling of this space has begun, the boundaries of the music are expressed, not as moments of time which mark a directional progression of material but as ". . . margins of a spatial projection of the total sound structure."[61] To achieve such a non-directional succession and to delineate such a space, Cage depends upon compositional rules and processes, whereby sounds and silences naturally and objectively arise within the space-time continuum. As a result, music is, for John Cage, free to be.

In each piece under examination, Cage has used very different means to produce music whose end result is always the same; the single component of indeterminacy consistent among all seven pieces is the use of sound and silence to demarcate musical space. Whether Cage utilizes pre-arranged rhythmic structures, chance procedures involving the I-Ching, observation of paper imperfections, measurements from random graphic scores to determine musical action, or the generation of musical shapes from the superimposition of a random collection of materials like a star map, the resulting

sounds and silences reveal a remarkably valid and consistent musical style.

It may seem that Cage, by laying out and filling empty spaces of time, is offering the world a radical redefinition of music. Robert Ashley has made this perceptive comment:

> "It seems to me that your influence on contemporary music, on "musicians," is such that the entire metaphor of music could change to such an extent that - time being the uppermost definition of music - the ultimate result would be a music that wouldn't necessarily involve anything but the presence of people."[62]

And of course Cage has allowed this 'metaphor' to be realized in his approach to musical space, sound and silence. The implication of such a redefinition is that music can simply exist to be nothing more than a language of statement as opposed to a rational discourse in the pursuit of musical ideas and thoughts. The latter idea is the essence of Renaissance art, and it has been with the artistic establishment ever since. It is John Cage who boldly declares that the Renaissance is dead.

FOOTNOTES

1. Richard Kostelanetz, "John Cage" in Master Minds: Portraits of Contemporary American Artists and Intellectuals (New York: MacMillan, 1969), p. 130.

2. The New Grove Dictionary of Music and Musicians, 1981 ed., s.v. "Cage, John," by Charles Hamm.

3. John Cage is the recipient of a Guggenheim Fellowship and an award from the National Academy of Arts and Letters for "extending the boundaries of music." He has held important artist residencies at several major music faculties in universities across the United States. Just recently, in 1981, he was awarded in New York City the Mayor's Award of Honor for his major contribution to the Arts.

4. Paul Griffiths, Cage, Oxford Studies of Composers No. 18 (London: Oxford University Press, 1981), p. 1.

5. Cage now lives in New York City.

6. Virgil Thomson, "Cage and the Collage of Notes" in Twentieth Century Composers: American Music since 1910 (New York: Holt, Rinehart & Winston, 1971), p. 70.

7. Michael Kirby and Richard Schechner, "An Interview with John Cage," Tulane Drama Review (10/2 1965), p. 61.

8. Thomson, "Collage", p. 74.

9. Daniel Charles, For the Birds: John Cage (Boston: Marion Boyars, 1981), p. 71.

10. Ibid., p. 73.

11. Tomkins, The Bride, p. 99.

12. Ibid., p. 100.

13. For several years the two composers, whose styles of composition are often seen as totally at odds, enjoyed a fruitful friendship and prolific correspondence. In fact, there was a time when they considered they were pursuing identical aims. But over a period of time Boulez became more and more critical of Cage's renunciation of control and a falling out between the two composers occurred in 1962. At this time Boulez made this comment about Cage: "I love John's mind, but I hate what it thinks."

14. Tomkins, The Bride, p. 108-109.

15. Kirby & Schechner, "Interview", p. 58.

16. Tomkins, The Bride, p.123; see also p. 125.

17. Richard Kostelanetz, John Cage (New York: Praeger Publishers, 1970), p. 171.

18. Although, since the Renaissance, there have been pockets of revolt against the idea of imitation of nature in art, especially in the Romantic and Post-romantic periods.

19. Lawrence LeShan and Henry Margenau, Einsteins' Space and Van Gogh's Sky (New York: MacMillan Publishing Co., Inc., 1982), p. 188.

20. Percy Bridgman, The Way Things Are (Cambridge, Mass.: Harvard University Press, 1959), p. 8; see also p. 168.

21. J. Bronowski, The Common Sense of Science (Cambridge: Harvard University Press, 1960), p. 79.

22. John Cage, Silence: Lectures and Writings (Middletown, Conn: Wesleyan University Press, 1961), p. 109.

23. Michael Nyman, Experimental Music: Cage and Beyond (London: Studio Vista, 1974), p. 22.

24. Peter Gena and Jonathan Brent, eds. A John Cage Reader in Celebration of His 70th Birthday (New York: C.F. Peters Corporation, 1982), p. 23.

25. Gena and Brent, Reader, pp. 41-42.

26. LeShan and Margenau, Einstein's Space, p. 242.

27. In this regard, both with the use of chance and making non-art material art, Marcel Duchamp's "ready-made" sculptures - manufactured objects elevated to the status of art only through the choice of the artist - correspond readily to Cage's "found" sounds.

28. Again, Cage takes his cue from Duchamp, whose art has been so prominent in the pernicious attacks against the traditions and values of European art.

29. Richard Kostelanetz, Master Minds, p. 116.

30. Gena and Brent, Reader, p. 24.

31. Chou Wen-Chung, "Asian Concepts and Twentieth-Century Composers," The Musical Quarterly (57/2 Apr.1970), p. 212.

32. Paul Griffiths, A Concise History of Avant-garde Music from Debussy to Boulez (New York: Oxford University Press, 1978), p. 124.

33. Ibid., pp. 7-11.

34. Roger Reynolds, Mind Models (New York: Praeger Publishers, 1975), p. 91.

35. Andre Hodeir, Since Debussy (New York: Grove Press, Inc., 1961), p. 71.

36. Griffiths, Concise History, p. 173.

37. Abraham Skulsky in an article in Musical America (Dec. 15, 1950), complains about Satie's use of humor as a mask behind which to hide an inability to write music. Even the New Grove article on Satie begins: "Erik Satie is best remembered as the composer whose music is deliberately modest and inconsequential, and noted for their bizarre titles."

38. Nyman, Experimental Music, p. 29.

39. Richard Kostelanetz, "Defense of Satie" in John Cage (New York: Praeger Publishers, 1970), p. 81.

40. Ibid., p. 83.

41. Michael Nyman, "Cage and Satie" (Musical Times, 114 1973), p. 1229.

42. Thomson, "Collage", p. 69.

43. Gena and Brent, Reader, p. 1.

44. Susan Sontag, "The Aesthetics of Silence" in Styles of Radical Will (New York: Farrar, Straus and Giroux, 1969), p. 16.

45. Ibid., p. 4.

46. Ibid., p. 5.

47. Jill Johnson, "There is no Silence Now," The Village Voice (Nov. 8, 1962), p. 4.

48. Sontag, Aesthetics, p. 11.

49. Kostelanetz, Master Minds, p. 120.

50. Gena and Brent, Reader, p. 38.

51. Joseph Machlis, "Four Representative American Composers: John Cage," in Introduction to Contemporary Music, 2nd. ed. (New York: W.W. Norton & Co., 1979), p. 499.

52. Griffiths, Cage, p. 18.

53. Ibid., p. 39.

54. Kostelanetz, Cage, p. 175.

55. HPSCHD is the culmination of Cage's attempts to artistically experience a multiplicity of events. These experiments stem from the inter-artistic and theatrical "Happenings" that took place in conjunction with Merce Cunningham and Robert Rauschenburg at Black Mountain College in 1952.

56. Kirby & Schechner, "Interview", p. 55.

57. William Shakespeare, As You Like It, H.J. Oliver, ed. (Baltimore: Penguin Books, 1968), p. 87.

58. Kirby & Schechner, "Interview", p. 50.

59. Nyman, Experimental Music, p. 19.

60. Kirby & Schechner, "Interview", p. 340.

61. Nyman, Experimental Music, p. 11.

62. Elliot Schwartz and Barney Childs, eds., "Interview with Roger Reynolds" in Contemporary Composers on Contemporary Music (New York: Holt, Rinehart and Winston, 1967), p. 346.

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THE UNIVERSITY OF ALBERTA

DEPARTMENT OF MUSIC

PRESENTS

MARK EELES, cellist

assisted by

JOACHIM SEGGER, pianist

Sunday, April 13, 1986 at 8:00pm.
Convocation Hall, Old Arts Building.

Sonata No. V in G major . . . . . Jean Baptiste Bréval
(1756-1825)

Brillante
Adagio
Rondo (Allegro)

Fantasy, Op. 19 . . . . . Gunther Schuller
(1925-)

Lento - Allegro furioso

Sonata in D major, Op. 102, No.2 . . . Ludwig van Beethoven
(1770-1827)

Allegro con brio
Adagio con molto sentimento d'affetto
Allegro fugato

INTERMISSION

Sonata in A major . . . . . César Franck
(Originally for violin) (1822-1890)

Allegretto ben moderato
Allegro
Recitativo-Fantasia (Ben Moderato)
Allegretto poco mosso

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I am indebted to my teachers Harvey Shapiro, Florence Hooton, and Claude Kenneson.

This recital is presented in partial fulfillment of the requirements for Master of Music degree for Mr. Eeles.